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ABSTRACT

One of a series of studies on the development of technical and vocational education in the member states of UNESCO, this report profiles the educational system in Malaysia. The four parts of the document provide general information about the following: the country; the history, philosophy, and structure of the educational system; vocational technical and polytechnic education, and issues and human resource development. Appendixes cover economic development and human resource requirement data information. Some of the highlights are as follows: (1) Malaysia is one of the fastest growing and rapidly expanding economies in the world; (2) unemployment and poverty have been reduced in the country; (3) since independence in 1957, the educational system has grown rapidly and the increasing use of educational technology has enhanced the quality of education; (4) the educational system is set up as 6 years primary, 3 years lower secondary. 2 years upper secondary, and 2 years postsecondary levels; (5) there are 7 universities, 2 colleges, and 7 polytechnics in the country; (6) most education is financed and administered by the federal government, although private technical training institutions are growing; (7) despite the average high expenditure on education, Malaysia's spending on technical education is very low; and (8) the Ministry of Education is planning staff development programs to enhance technical training. (KC)

ED 399 375

NATIONAL PROFILES IN TECHNICAL AND VOCATIONAL EDUCATION IN ASIA AND THE PACIFIC

Malaysia

UNEVOC
International Project on Technical and Vocational Education

U.S. DEPARTMENT OF EDUCATION
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NATIONAL PROFILES IN TECHNICAL AND VOCATIONAL EDUCATION IN ASIA AND THE PACIFIC

Malaysia

UNESCO PRINCIPAL REGIONAL OFFICE FOR ASIA AND THE PACIFIC, BANGKOK, 1993

This volume is one of a series of member country profiles on Technical and Vocational Education of the following member countries:

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AUSTRALIA
BANGLADESH
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FOREWORD

Technical and vocational education has always been an important component of UNESCO's consecutive Medium Term Plans. The basic objective of this programme is to support the efforts of Member States to link education systems more closely to the world of work and to promote the expansion and improvement of technical and vocational education in the light of changing employment needs.

The Colombo Plan Staff College for Technician Education (CPSC) also dedicates itself primarily to enhancing the growth and development of the technician education systems in its member countries which are located in the Asia and Pacific region. Its programmes, projects and activities are geared to provide the needed impetus for the professional development of senior level personnel involved in technician education development efforts.

UNESCO has launched an International Project on Technical and Vocational Education (UNEVOC) as of 1992 in co-operation with the Government of Germany, ILO, FAO, UNDP and NGOs interested in the reform of technical and vocational education. This project focuses on exchanging information, research and experiences on policy and programme issues in technical and vocational through a network of co-operating institutions.

In a spirit of co-operation between UNESCO and CPSC, under UNEVOC, an attempt is being made to compile and publish studies on the development of technical and vocational education in Member States in the form of TVE profiles of 21 countries. It is hoped that this series will serve as a handy reference information on TVE systems, staff development, technical co-operation and information networking. These studies have been possible because of the full co-operation to UNESCO PROAP and CPSC by all concerned in the Member States.

The opinion expressed in this study are those of the authors and do not necessarily reflect the position of UNESCO and CPSC in this regard. This profile on Malaysia was prepared by Dr. Iluminada G. Espino, Governing Board-engaged Faculty Member of CPSC from the Philippines and Prof. M. Radhakrishna, Seconded Faculty Member to CPSC by the Government of India.

C.K. Basu
Director, CPSC

Victor Ordonez
Director, UNESCO PROAP

MALAYSIA: A COUNTRY PROFILE

Malaysia is one of the UNESCO-CPSC Member States in the central part of the Southeast Asian region. It has a land area of 32.9 million hectares made up of two parts, the Malay Peninsular and the States of Sabah and Sarawak on the island of Borneo. It is a multi racial country with an approximate population of 18.3 million and annual growth rate of 2.1%. Malays (Bumiputra) Chinese, Indians and the indigenous people of Sabah and Sarawak make up the majority of the population. There are 13 states (11 in Peninsular Malaysia and 2 on the island of Borneo) and the federal capital is Kuala Lumpur. Malaysia's political system is a constitutional monarchy with multi-party structure. The national language is Bahasa Malaysia and Islam is the official religion.

The following sections are intended to briefly describe the country profile in four parts, namely:

General Information

Educational System

- Historical Development
- Educational Philosophy
- Educational Programme and Structure

Vocational Technical and Polytechnic Education

- Private Education and Training

Issues and Human power Development

Part I

GENERAL INFORMATION

Malaysia is a land of opportunities where natural resources abound, labour is cost effective, industrial land ample, infrastructure adequate and the currency is relatively strong. All these are cased within a framework of official policies and incentives that provide for a dynamic and efficacious economic climate.

Despite a generally unfavorable external environment, Malaysia managed to achieve another year of high economic growth in 1992 while avoiding a major increase in inflation. In 1992, the economy grew by 8 per cent, which is among the fastest rates in the region. The labour situation improved as indicated by the fall in the unemployment rate to about 4.1 per cent from 4.3 per cent in 1991. Labour shortages are felt not only in the plantation and construction sectors but also in manufacturing and services. The tight labour market, which has led to double digit wage increases, has been exacerbated by the geographical and occupational immobility of labour.

To meet this labour demand, the Government has upgraded vocational training systems for industry and encourages capital intensive means of production. While foreign workers are now allowed to work on a selective basis for up to five years, their employees have to pay an annual levy ranging from M$360 - 2,400/worker (ADB Report 1993).

Malaysia is one of the world's fastest growing economies and has considerably reduced poverty. This is principally triggered by the consistent implementation of the New Economic Policy (NEP 1971) of the government. It was intended to promote economic growth by equitably balancing the levels of economic power from the three major ethnic groups as it encourages greater participation by the indigenous Malays (Bumiputra) rather than the Malaysian of Indian or Chinese origin.

Generally, Malaysia ranked 57 among 173 countries in her human development index (.79). Specifically, her human development profile is described as follows (UNDP Human Development Report: 1993):

Figure 1. Malaysia's Profile with Selected Indicators

Indicators		Data
Population		18.3 million
Male	9,078,630	
Female	9,221,370	50.39 %
Growth rate/year		2.1 %

1

Figure 1. Malaysia's Profile with Selected Indicators (cont'd)

Indicators	Data
Land area	329,758 sq. km.
Peninsular Malaysia	231,689 sq. km.
Sabah - Sarawak	98,069 sq. km.
GNP	41.5 billion USD
GDP	42.4 billion USD
GNP per capita	2,330 USD
Total Gov't. Expenditure (MSA Stat'90)	33 billion USD
Expenditure	
Education per cent of GNP	5.5 %
Health per cent of GNP	1.6 %
Military per cent of GDP	3.6 %
Unemployment rate	4.3 %
Absolute Poverty	32.0 %
Urban	13.0 %
Rural	38.0 %
Life expectancy at birth	70.1 years
Infant Mortality	15/1,000
Adult Literacy	78.0 %
Male	87.0 %
Female	70.0 %
Mean years of schooling	5.30 %
Access to health services	88.0 %

Source: UNDP Human Development Report 1993

1.1 Development Thrust

Datuk Seri Dr. Mahatir Mohamad, Prime Minister of Malaysia, outlined his development policy for the country to achieve full industrial development by the year 2020. Henceforth, this has been referred to as the *Vision 2020* with nine strategic challenges (The Star: 1991):

1. Establish a united Malaysian nation with a sense of common and shared destiny. A nation at peace with herself, territorially and ethnically integrated, living in harmony in full and fair partnership, made up of one *Bangsa Malaysia* with political loyalty and dedication to the nation

2. Create a psychologically liberated, secure and developed Malaysian Society with faith and confidence in herself, justifiably proud of what she has accomplished and robust enough to face all manner of adversity. The Malaysian Society must be

distinguished by the pursuit of excellence, fully aware of all her potentials, psychologically subservient to none, and respected by the peoples of other nations.

3. Foster and develop a mature democratic society, practising and developing a mature democratic society, practising a form of mature consensual, community-oriented Malaysian democracy that can be a model for many developing countries.

4. Establishing a fully moral and ethical society, whose citizens are strong in religious and spiritual values and imbued with the highest of ethical standards.

5. Establishing a matured liberal and tolerant society in which Malaysians of all colors and creeds are free to practice and profess their customs, cultures and religious beliefs and yet feeling that they belong to one nation.

6. Establishing a scientific and progressive society; a society that is innovative and forward-looking, one that is not only a consumer of technology but also a contributor to the scientific and technological civilization of the future.

7. Establishing a fully caring culture, a social system in which society will come before self: in which the welfare of the people will revolve not around the state or the individual but around a strong and resilient family system.

8. Ensuring an economically just society; a society in which there is a fair and equitable distribution of the wealth of the nation, in which there is full partnership in economic progress. Such a society cannot be in place so long as there is the identification of race with economic function, and the identification of economic backwardness with race.

9. Establishing a prosperous society, with an economy that is fully competitive, dynamic, robust and resilient.

To synthesize the Vision, Malaysia aims to achieve by the year 2020, a united nation, with a mature, democratic, confident, caring and economically just and prosperous society with a competitive dynamic, robust and resilient economy; as well as a culture that is liberal and tolerant, scientific, innovative and forward looking.

In Malaysia's drive to move vigorously ahead, nothing is more fundamental than the education, training and development of human resources. The Government is devising appropriate schemes to raise the level of management expertise, technological know-how to meet the serious shortage of skilled and middle level manpower. The talents, skills, creativity, character and will of the people are the critical development resource which need to be continuously harnessed; new standards have to be set and new results achieved.

With the projected 7.5 per cent increase of employment, the master plan for manpower development of the country is based on projected sectoral demands as indicated in the appendix.

To facilitate industrialization, Malaysia has also been developing industrial estates. As of January 1992, a total of 166 had been developed and 94 have been fully located.

Part II

EDUCATIONAL SYSTEM

2.1 Historical Development

The country's educational system is influenced by its social, economic and political development. From a historical perspective, the development is divided into 3 main periods (Education in Malaysia; 1989).

Pre-colonial period - it was generally non-formal in nature; the emphasis was on Quranic teaching, spiritual knowledge and morality with some rudiments in handicrafts and apprenticeship in agriculture. At a more formal level it was still religious in nature with a system of *Pondok* schools or *"madrasah"* set up by the Islamic scholars providing a very strong Islamic bias. Some of these types still exist in Malaysia.

Colonial period - the increase in commercial enterprise and development specially in the rubber and tin industries saw the influx of Chinese and Indian immigrants, thus transforming the demography into a multiracial society. To cater to the needs of this period, English medium schools were set up for the needs of the British administration, Malay schools for secular education while Chinese and Tamil schools for the respective needs of their communities. These primary schools had different objectives, curriculum, organization, standards and media of instruction. Secondary education was only available in Government and Mission English Schools as well as in some Independent Secondary schools in the urban area. The educational system was fragmented.

Post-colonial period - a national system of education for all regardless of ethnic origin was laid by the Government to ensure a united nation of a plural society. Since Malaysia attained its independence in 1957, the system of education has undergone changes and development. Curricular reforms and the increasing use of educational technology have enhanced the quality of education.

2.2 Educational Philosophy

The current system of education is principally guided by the country's National Education Policy which is focused to the holistic development of the individual.

Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce

individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards, and who are responsible and capable of achieving a high level of personal well-being as well as being able to contribute to the harmony and betterment of the society and the nation at large.

The Educational Philosophy is schematically presented in the next page.

2.3 Educational Programme and Structure

These national aspirations are translated into educational programs at all levels, from the primary to the university. The formal school system has a 6-3-2-2 pattern representing the primary, lower secondary. upper secondary and post secondary levels. The tertiary level is provided by universities, colleges and institutes in both the academic and professional fields. For a better appreciation of the educational system and the organizational structure please refer to Figures 3 and 4.

The institutes of higher education include universities, colleges and polytechnics. University and College education is coordinated and monitored by the Higher Education Division while Polytechnics fall under the purview of the Technical and Vocational Education Division of the Ministry of Education. There are seven universities, two colleges, and seven polytechnics (Batu Pahat Polytechnic serves also as a staff training center).

The following are the seven universities in Malaysia:

1. **Universiti Malaya**

   Universiti Malaya was established as the university of the Federation of Malaya on 1 January 1962 being successor to the University of Malaya established in 1949 to serve the higher educational needs of the Federation of Malaya and of Singapore. Currently, the university has ten faculties, namely the Faculty of Engineering, Arts, Social Sciences, Science, Medicine, Education, Economics, Administration, Dentistry and Law. The Faculty of Syariah and Usuluddin are under the Academy of Islam which is a branch campus of the Universiti Malaya.

2. **Universiti Sains Malaysia**

   Established in 1969, Universiti Sains Malaysia, Pulau Pinang, offers a wide range of courses through its 15 Schools of Studies. There are eight applied science and technological based schools, three Liberal Arts schools and four basic science schools. The university also offers an off-campus programme to students in full-time employment who have no opportunity to pursue their education at tertiary level on a full-time basis. The duration of the course is six years, of which five years are off-campus and the final year residential.

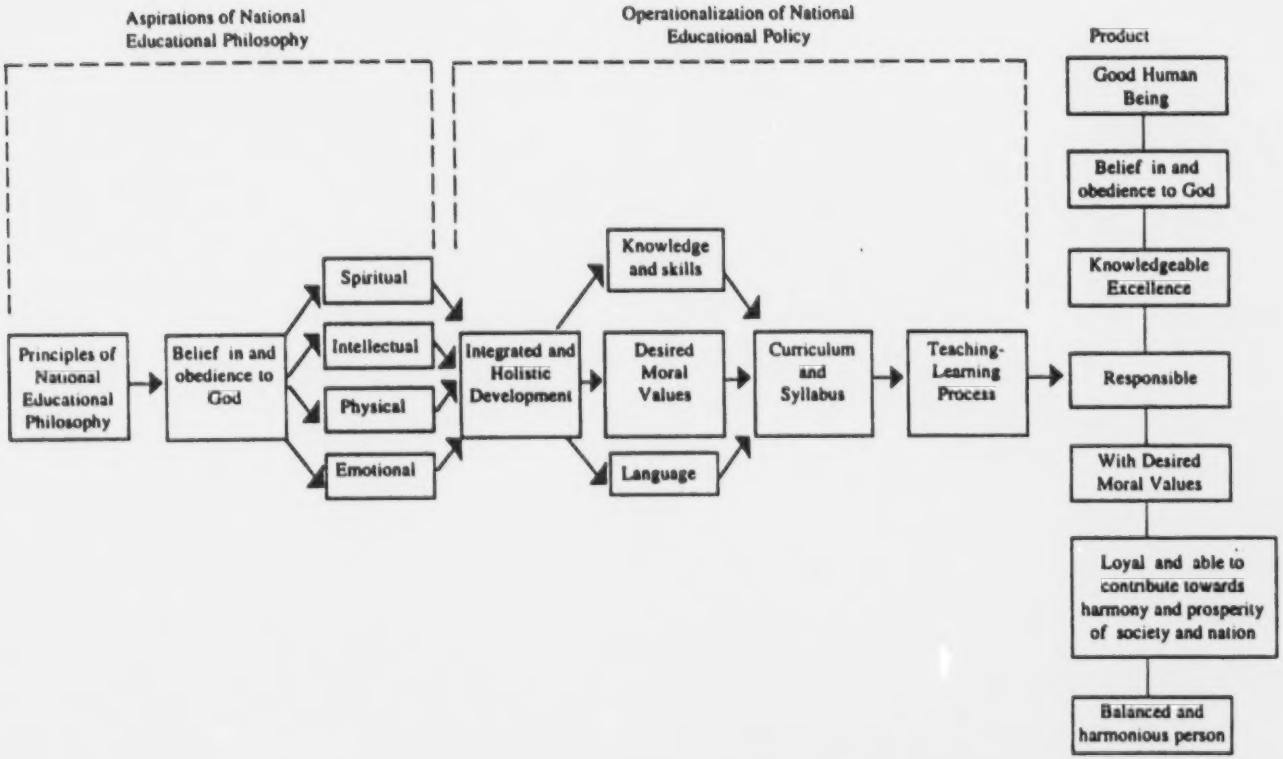

Figure 2. National Educational Philosophy

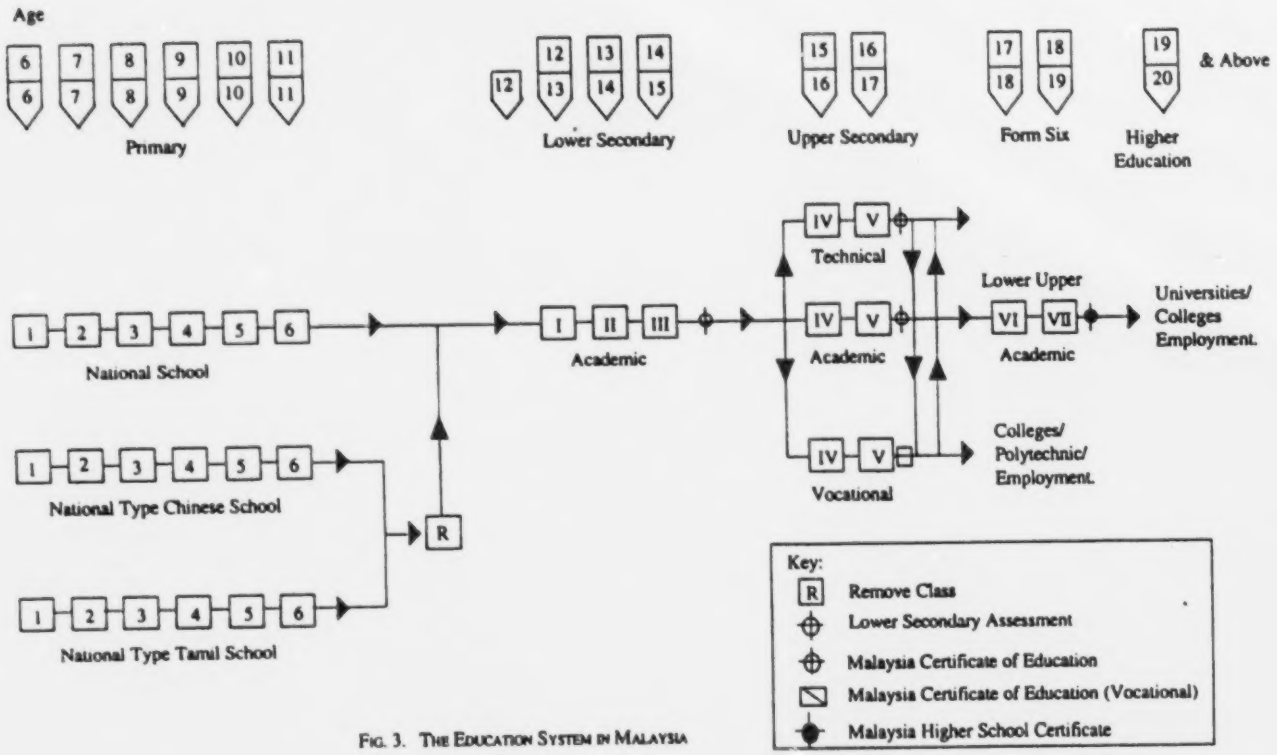

Figure 3. The Education System in Malaysia

FIG. 3. THE EDUCATION SYSTEM IN MALAYSIA

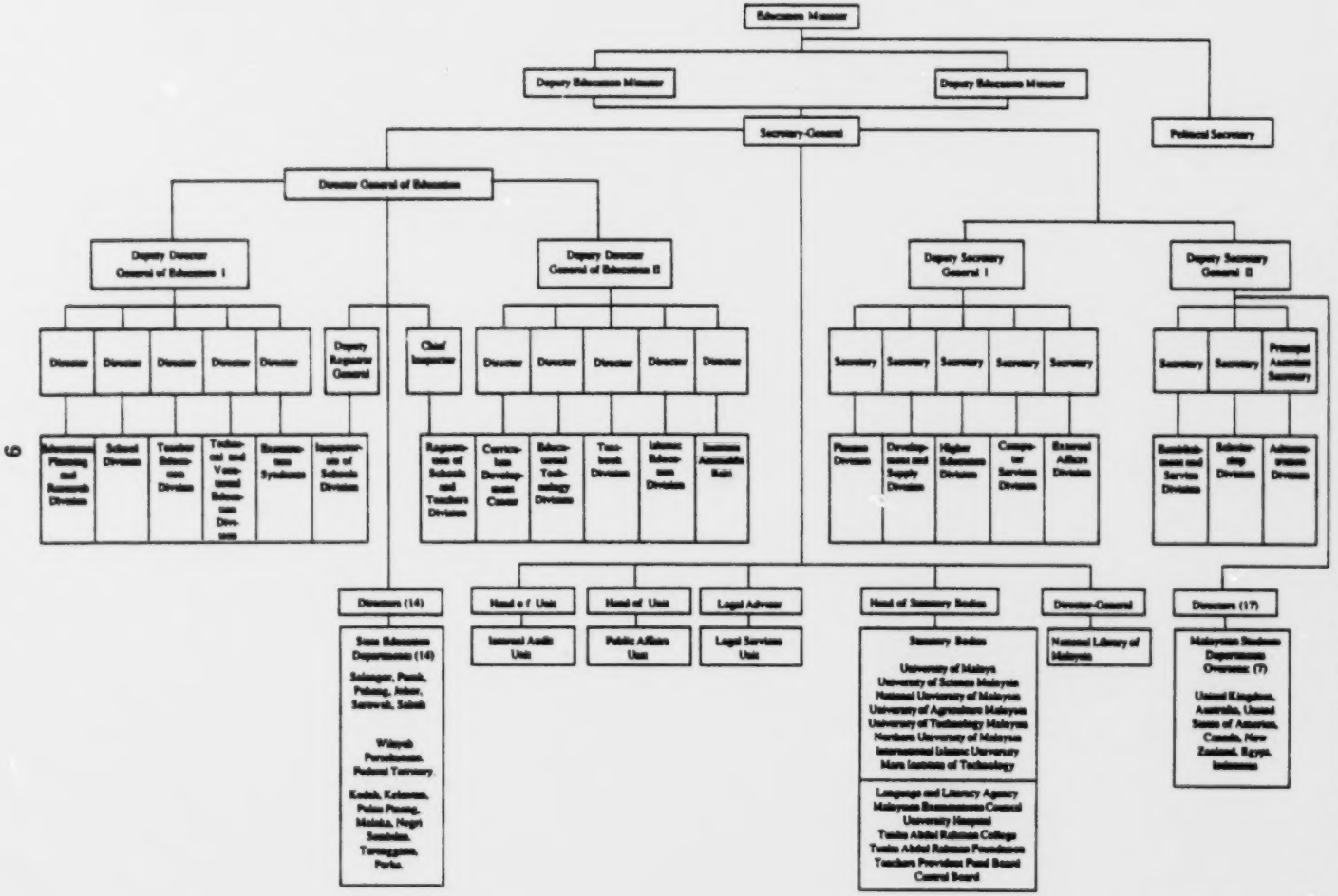

Figure 4. Organizational Structure of the Ministry of Education, Malaysia

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3. **Universiti Kebangsaan Malaysia**

   The university, established in 1970, is the first university to use Bahasa Malaysia as the medium of instruction in all areas of study. At present the university has 12 faculties namely, the Faculty of Business Management, Development Science, Economics, Education, Islamic Study, Engineering, Law, Life Sciences, Medicine, Social Sciences and Humanities, Science and Natural Resource, and Physical and Applied Science.

4. **Universiti Pertanian Malaysia**

   Universiti Pertanian Malaysia was established on 4 October 1971. It has nine faculties which are the Faculty of Economics and Management, Veterinary Medicine and Animal Science, Forestry, Fisheries and Marine Science, Agriculture, Science and Environmental Studies, Food Science and Biotechnology, Education and Engineering.

5. **Universiti Teknologi Malaysia**

   Founded on 14 March 1972, the Universiti Teknologi Malaysia has seven faculties, namely, the Faculty of Civil Engineering, Mechanical Engineering, Electrical Engineering, Surveying, Built Environment, Science, Chemical and Natural Resources Engineering. In addition to these, the Center for Humanities Studies is also of faculty status.

6. **Universiti Utara Malaysia**

   This university was established in 1984 and is located in the state of Kedah. The university offers a variety of programmes organized by the School of Economics, Public Administration, Management and Accountancy. Irrespective of their field of study, students are required to take general education courses offered by the Department of Languages, Centre for Scientific Thinking and Centre for Foundation Studies.

7. **International Islamic University**

   Established in 1983 through international Islamic cooperation and funding, the university is temporarily located in Petaling Jaya. The Islamic philosophy of knowledge and education forms the basis of all academic programmes including the integration of a strong Islamic content and approach in the curriculum. The university has a specific structure for its academic programmes and compartmentalization is avoided by encouraging interdisciplinary unifying courses. The courses are offered through Kulliyahs and Centres, namely, the Kulliyah of Economics, Laws, Centre for Fundamental Knowledge, Language and Matriculation. The university offers places for students from the Muslim world, within and outside Malaysia, including non-Muslims who are interested in understanding the Islamic approach to education.

There are two additional institutes/colleges which are worth describing:

1. **Institut Teknologi MARA**

   Institut Teknologi MARA was originally a training centre set up in 1956 by the Rural and Industrial Development Authority (RIDA), now known as the Majlis Amanah Rakyat (MARA). The institute offers a variety of courses especially in the fields of technology, commerce, management and administration.

2. **Kolej Tunku Abdul Rahman**

   This college established in 1969, provides higher education at pre-university, diploma and certificate levels with concentration in the fields of commerce, science and technology. The college receives financial assistance from the government and donations from business organizations and individual philanthropists.

Part III

VOCATIONAL TECHNICAL AND POLYTECHNIC EDUCATION

The vocational and technical orientation of the education starts at the upper secondary level. Based on the pupils performance in the Lower Secondary Assessment (LSA) Examination, they are channelled into either the academic (arts, sciences or technical) or vocational streams. Those selected for technical and vocational education are placed in Technical and Vocational Secondary Schools respectively. The 1990 statistics to describe these levels are indicated below:

Factors	Vocational	Technical
Institutions	70	9
Enrolment	24,845 (M: 19,227; F: 5,618)	5,277 (M: 3,406; F: 1,871)
Teachers	2,570 (M: 1,807; F: 763)	391 (M: 211; F: 180)
Classes	1,040	187

At the end of the two year course, students in the technical stream sit for the Malaysian Certificate of Education (MCE) Examination. The students in the vocational schools pursuing vocational education stream sit for the MCE, while those in the skill training stream sit for the Malaysia Skills Certificate (MSC) (Basic/Intermediate). After passing their respective examinations, students can either enter the labour market or continue their education at a higher level. They could be admitted at the Colleges or the Polytechnics.

3.1 Education at the Polytechnics

Seven polytechnics have been established since 1969 to provide education and training in engineering and commerce at the technician and junior executive levels (such as engineering technicians, technical assistants and business personnel). With the current push towards economic expansion and industrialization, the role of the polytechnics is quickly taking a centre stage. The seven polytechnics are indicated as follows: (Educational Statistics 1990)

The first is **Ungku Omar Polytechnic**; established in 1969 in Ipoh, Perak Daruk Ridzuan, on a 50-acre site eight kilometers from the heart of the city.

It has annual intake of about 1,278 and the enrolment of 3,597 in its certificate and diploma courses with an output of 683.

The **Sultan Haji Ahmad Shah** Polytechnic was established in **1976**. It is situated on a 185 acre site at Semambu, about 10 kilometers from the centre of Kuantan. It has an annual intake of 1979 and an enrolment of 2616 in both the certificate and diploma courses with an output of 710.

The **Batu Pahat** Polytechnic was established in **1983**. It is situated in Parit Raja, Johor. Under the Sixth Malaysian Plan and with funding support from the World Bank, it is being developed into a Staff Training Centre. Four programmes are to be offered, namely Certificate in Technical Education, Bachelor of Science degrees in Civil, Electrical and Mechanical Engineering and Master of Science in Technical Education.

The **Sultan Abdul Halim Mu'adzam Shah** Polytechnic was established in **1984**. It occupies a strategic position in a rapidly growing industrial area about 20 kilometers from the heart of Alor Setar, in the "rice bowl" state of Malaysia (kedah Darul Aman). The polytechnic has an annual intake of about 1101 students and an enrolment of about 3,599 in both certificate and diploma levels with an output of 683.

The **Kota Bharu** Polytechnic was established in **1985** in Kok Lanas, amidst picturesque villages, 24 kilometers from Kota Bharu. It has an annual intake of 1,004 students and an enrolment of 2,212 with an output of 1,006.

The **Kuching** Polytechnic was established in **1989**. It is situated in Matang, about 20 kilometers from Kuching, the state capital of Sarawak. It has an annual intake of 745 and an enrolment of 936 with an output of 289. This polytechnic, which is surrounded by highlands and home to a diverse range of flora and fauna is particularly associated with PETRONAS. Hence, its courses are specifically tailored to the petroleum industry.

The **Port Dickson** Polytechnic is the newest polytechnic which was established in **1990**. It is situated in Si Rusa and the sea front locale of Negri Sembilan, 115 kilometers from Kuala Lumpur. It has an annual intake of about 366 and an enrolment of 1,466 and an output of 374.

The programmes at the seven polytechnics are full-time certificate and diploma courses. The Certificate is a 4-semester course with two-year duration. Students who consistently maintain a high standard are considered to continue for another year to obtain a Diploma in their related field.

The Diploma courses are of three years duration (except Marine engineering; four years and Secretarial; two years). All polytechnic courses include industrial attachment in the public or private sector for a period of six months during the third semester. This stimulates students' innovative capabilities and gives ample scope for learning the skills in the broadest sense.

The courses at the polytechnics are conducted by four departments - Commerce, Civil, Electrical and Mechanical Engineering.

Generally, all of seven polytechnics are self-contained. They provide residential, recreational and worship facilities including cafeteria, co-operative store and a bookshop, all meant to cater to the daily needs of students and staff.

The Technical and Vocational Education Division is responsible for the organization, management and supervision of the educational programmes and activities of vocational and technical schools and polytechnics. The Division also co-ordinates closely with other agencies involved in training of semi-skilled and skilled manpower such as the National Vocational Training Council (NVTC).

The organizational chart in the next page indicates the structure of the Technical and Vocational Education Division.

3.2 Private Education and Training

Generally, education is a federal matter and is therefore the responsibility of the federal government. However, the private sector plays also a supplementary role. The next figure describes some educational data in the private sector.

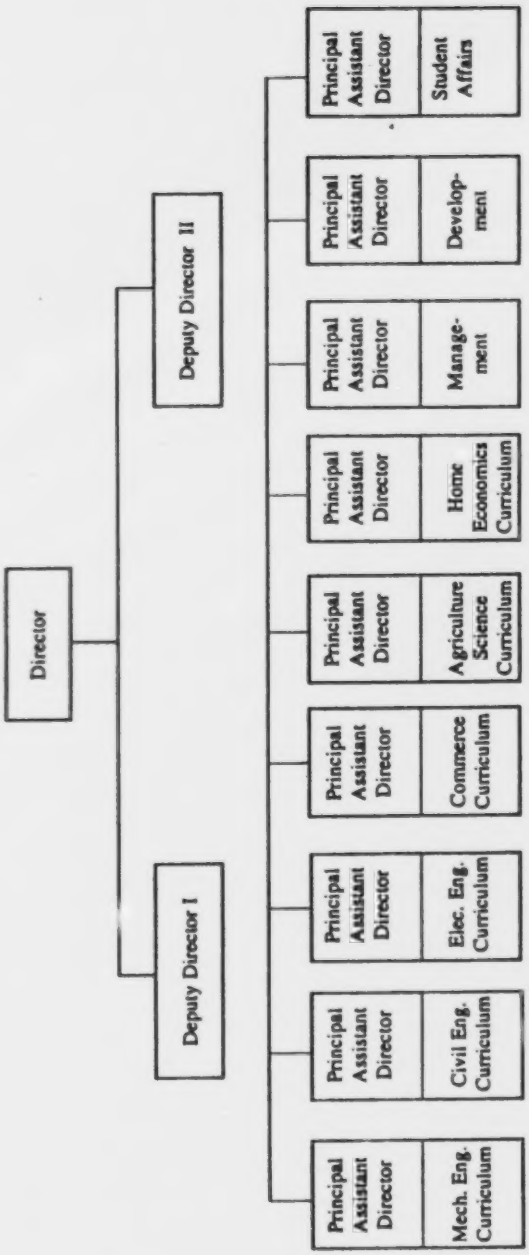
Figure 7. Private Educational System Data

	Male	Female	Total
Enrolment			
Primary	4,449	3,675	8,124
Secondary	40,839	49,590	90,429
Total	45,288	53,265	98,553
Teachers			
Primary	115	354	469
Secondary	1,216	1,804	3,020
Total	1,331	2,158	3,489
Institutions			
Primary			56
Secondary			300
Vocational			28

Malaysia: Educational System Profile
(Educational Statistics 1990)

Indicators	Data			
Enrolment/Rate	**M**	**F**	**T**	**%**
Kindergarten	167,109	161,704	328,813	
Primary	1,256,795	1,190,411	2,447,206	99.8
Secondary				
Lower	473,999	468,802	942,808	83.0
Upper	176,480	184,931	361,411	49.1
Post Secondary	24,960	36,896	61,856	
Polytechnics	7,033	2,371	9,404	
Colleges				18.9
Tunku Abdul Rahman	4,815	3.041	7,856	
MARA Science Colleges	4,379	4,117	8,496	
MARA Inst. of Tech.	14,801	13,803	27,884	
Teacher Training Coll.	10,092	12,914	23,006	
Universities	7,223	6,044	13,267	2.9
Graduates				
Polytechnics	1,993	662	2,655	
Colleges				
Tunku Abdul Rahman	1,218	624	1,842	
MARA Inst. of Tech.	3,539	3,255	6,794	
Teacher Training	4,421	5,135	9,556	
Universities	7,223	6,044	13,267	
Teachers				
Primary	51,895	68,130	120,025	
Secondary	35,487	36,968	72,455	
Polytechnics	510	136	646	
MARA Science Colleges	457	482	939	
Teacher Training Coll.	1,469	714	2,183	
Universities			5,260	
Educational Institutions				
Primary			6,828	
Secondary			1,327	
Polytechnic			7	
Teacher Training			28	
Colleges			2	
University			7	
Estimated Educational Expenditure (in USD)			6,331,965,227.17	18.2 (of gov't budget)
Primary & Secondary Education			3,290,994,040.45	
Technical & Vocational Education			111,254,306.07	
Teacher Education			190,756,987.60	
Higher Education			778,189,179.57	
Student Welfare			256,219,947.02	
Planning and Research			38,507,957.75	
Administration			179,017,534.58	
Development Expenditure			1,487,025,274.13	

Figure 7. Organizational Structure of the Technical and Vocational Education Division, Ministry of Education, Malaysia



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Private institutions also offer continuing educational programmes in vocational, technical and commercial fields. Full time training is provided in a wide range of courses for secondary school leavers at both diploma and certificate levels. These school leavers could also pursue industry-based training on a part-time basis.

Public and private schools are expected to have identical roles and functions. They are open to all students, they use the national curriculum with the Malay language as a compulsory subject.

The shortage of technicians boosted the development of private technical institutions which must be officially registered with the Ministry of Education. As of this writing, there are 28 registered technical-vocational schools in the Ministry. Generally, they cover all areas of engineering, computer applications, business and secretarial studies, arts and design.

The better known full time training institutions in the private sector are the **Federal Institute of Technology, Monfort Boys Home, the Workers' Institute of Technology** and the **City College of Technology**.

The **Federal Institute of Technology** was established in 1986 to provide training in various disciplines of engineering. Its students enter polytechnics and universities for advance courses in engineering and may gain admission directly to the second year of the third year engineering degree course in the United Kingdom or to the third year of the four year engineering degree in the United States. FIT also offers evening part time programmes jointly with the Institute of Future Technical Education.

The **Monfort Boys' Home** is a vocational institute founded in 1959 by a church organization to provide a residential home as well as industrial skills training to boys from poor families with a view to equip them for gainful employment. Due to its social and charitable character it operates on a tight budget and therefore not able to take in more trainees.

The Workers' Institute of Technology was established by the Transport Workers Union of Malaysia and became fully operational in 1977. It is funded by local and international unions to provide job entry training in practical skills and related theory, upgrade technical skills of workers and improve their earning power and status in the community.

There are also various government agencies providing training outside the formal education system. Among these agencies are the Ministries of Labour, Youth and Sports, Agriculture Land and Regional Development and the Ministry of Rural and National Development. Statutory agencies providing formal and non-formal educational training include PETRONAS, the National Electricity Board and MARA.

Part IV

ISSUES AND HUMANPOWER DEVELOPMENT

Considering the rising cost of the requirements of vocational, technical and polytechnic education and training, as indicated in the comparative educational expenditure of some Asian countries, in the Appendix in Table 1 it is to be noted that Malaysia has the highest percentage (6.1%) of educational expenditure, and ranks second to Taiwan (19.6%) in terms of its percentage of total government expenditure. **However, despite the high average expenditure on education, Malaysia's expenditure on technical and vocational education is very low (2%).**

In the country's effort to facilitate the training of skilled and middle level manpower, the Economic Planning Unit of the Prime Minister in collaboration with the MARA group of institutions embarked on a co-operative venture with the German government by establishing the **German-Malaysian Institute (GMI)** sometime in 1989. Likewise, the Ministry is also undertaking a study of the Germany, New Zealand, Sweden, U.S.A. and Australian vocational systems and is looking into the Technical and Further Education (TAFE) college structure and its plan is being undertaken to possibly adapt whatever is practicable. Additionally, the Ministry of Education encourages twinning programmes in accordance with the regulation set by the Ministry. (Business Times, Malaysia June 1993).

Staff development programmes in Ministry of Education of Malaysia provide opportunities for continuing education and career advancement. These programmes are directed to all levels of personnel (teachers, administrators and support staff). Among the major agencies involved in the co-ordination and planning of courses offered to personnel in the Ministry of Education are:

- **The Institute Aminuddin Baki (IAB)**, the Ministry of Education Staff Training Centre plans, organizes and conducts short courses at certificate level, funded by the Ministry of Education and the World Bank's Fellowship Training Programmes. Courses which may last from one week to three months are offered to teaching, managerial and supporting staff.
- **The Scholarships Division** manages scholarships awarded for courses ranging from the certificate to doctoral levels at institutions both locally and abroad. These programmes come under the Ministry of Education Staff Development Programme and the World Bank Fellowship Programme.

- **The Technical and Vocational Division** plans and coordinates study tours, short courses and courses at the Bachelors and Masters levels which are funded by the Asian Development and the World Banks.

4.1 CPSC and Staff Development

The Colombo Plan Staff College (CPSC) for Technician Education provides continuous development assistance to Malaysia to help enhance technician and vocational education in the country. To date, it has conducted 14 In-country training courses **in technician and vocational education** on the following themes distributed by dates:

1. Curriculum Analysis (June 1977)
2. Instructional Design & Delivery (April 1980)
3. Curricular Implementation & Evaluation (April 1982)
4. Policy Analysis & Development (March 1985)
5. Assessment in the Psychomotor Domain I (December 1985)
6. Assessment in the Psychomotor Domain II (April 1986)
7. Module Writing (January 1987)
8. Strategic Planning (February 1987)
9. Workshop and Laboratory Management (November 1987)
10. Developing Skills in Research (August 1989)
11. Competency Based Teacher Training (July 1990)
12. Small Scale Enterprise Development (July 1991)
13. Research in Technician Education (May 1992)
14. Small Scale Enterprise Development (July 1992)

In addition to the in-country programmes, Malaysia has been sending technical and vocational educators to the CPSC in its regional, sub-regional and special training courses also. The figures below indicate the total participation to the CPSC training courses by type and sex:

Type of Course	Participants		
	M	F	Total
Regional	157	27	184
Sub-regional	25	6	31
In-country	265	37	302
Special	3	1	4
Total	450	71	521

It is noted from the preceding figures that the female participation in training and development courses at the CPSC is 71 out of a total of 521 (15.78%). This is also the general participation trend at the CPSC courses by the other member countries.

POSTSCRIPT

As previously discussed, the Malaysian economy has performed very well in the past years despite a generally unfavourable external environment. Its growth rates have been among the highest in the world and have led to a significant reduction in unemployment and poverty.

The critical challenges and issues like pluralism, equity, labour shortages, human power and societal development are specifically addressed to in the country's (Vision 2020) national masterplan to achieve a fully developed and industrial society.

In the educational sector, specifically in the technical and vocational division, the way forward is systematically and strategically initiated with the assistance of the World Bank, ADB, CIDA, and other international agencies.

APPENDICES

Table 1. Manpower Requirements by Economic Sector, 1990-2000
(in thousands of persons)
(Based on a projected rate of economic growth of 7.5% in GDP)

Sector	1990	1995	2000	Increase 1990-2000
Agriculture, Livestock	1,975.0	2,014.8	2,055.4	0.4
Forestry and Fishing				
Mining and Quarrying	39.1	30.2	23.4	5.0
Manufacturing	1,159.31	1,400.3	1,691.5	3.8
Construction	424.2	567.7	759.7	6.0
Electricity, Gas and Water	46.6	59.5	74.5	4.8
Transport, Storage and Communications	278.1	372.2	498.0	6.0
Wholesale and Retail	1,096.0	1,625.3	2,410.4	8.2
Trade, Hotels and Restaurants				
Finance, Insurance, Real Estates and Business Services	231.3	341.4	504.0	8.1
Government Services	850.2	898.0	948.5	1.1
Others	503.2	762.7	902.2	6.0
TOTAL	6,603.4	8,072.7	9,869.0	4.1

Source: Techint: Final TA Report on TEVIT study 1990.

Table 2. Manpower Requirements by Occupational Group 1990-2000
(in thousand of persons)

Occupational Groups	1990	1995	2000	Average rate of increase per annum
Professional and Technical	521.4	659.1	833.3	4.8
Administrative and Managerial	165.5	222.5	299.2	6.1
Clerical	582.3	725.6	904.3	4.5
Sales	763.8	1,071.3	1,502.5	7.0
Service	751.6	968.4	1,247.8	5.2
Agriculture	1,995.7	2035.9	2,077.0	0.4
Production Workers	1,823.1	2337.9	2,998.0	5.1
TOTAL	6,603.4	8072.7	9,869.0	4.1

Source: *Techint: Final TA Report on TEVIT study 1991.*

Table 3. Demand for Production Workers

Category	1990	1995	2000
1. Production Supervisors	61,110	78,366	100,493
2. Miners and Drillers	12,189	15,631	20,045
3. Metal Processors	8,530	10,939	14,028
4. Wood Preparation Workers	63,790	81,803	104,900
5. Chemical Processors	32,050	41,086	52,705
6. Fibers, Spinners, Weavers	16,257	29,621	37,984
7. Tanners	318	408	523
8. Food and Beverage Processors	96,569	123,839	153,804
9. Tobacco Preparers	3,584	4,596	5,894
10. Tailors, Dressmakers, etc.	51,958	66,630	35,443
11. Shoemakers, Leather Goods Workers	13,655	17,511	22,455
12. Cabinet Workers	50,719	65,040	83,404
13. Stone Cutters	1,518	1,947	2,496
14. Machine Tool Operators	17,458	22,387	28,709
15. Machinery Fitters and Assemblers	170,897	219,155	281,033
16. Electrical and Electronic Workers	176,841	226,776	290,806
17. Broadcasting Station Operators	2,016	2,478	3,178
18. Plumbers	85,832	110,068	141,148
19. Jewellery and Precious Metal Workers	7,940	10,181	13,056
20. Glass Formers, Blowers, etc.	12,725	16,318	20,926
21. Rubber and Plastic Production Workers	31,562	40,472	51,901
22. Paper and Paperboard Workers	4,851	6,221	7,978
23. Printers and Related Workers	23,142	29,677	38,057
24. Painters	37,410	47,973	61,519
25. Musical Instrument Workers	42,077	53,959	69,194
26. Bricklayers, Glaziers, etc.	204,658	262,448	337,515
27. Generating Operators	13,340	17,106	21,936
28. Dockers	173,030	211,890	284,540
29. Transport Workers	261,979	335,956	430,813
30. Laborers	61,530	78,904	101,183
31. Other Workers in Production	83,565	98,531	125,337
TOTAL	1,823,100	2,337,900	2,998,000

Source: Techint: Final TA Report TVEIT Study on 1991.

Table 4. Educational Expenditure as a Percentage of GNP in Selected Asian Countries, 1986-1990

Country	1986	1987	1988	1989	1990	Average
Malaysia	7.2	6.3	6.1	5.8	5.3	6.1
Indonesia	2.1	1.9	2.1	2.1	2.0	2.1
Philippines	2.4	2.4	2.7	2.6	2.6	2.5
Singapore	5.2	5.1	4.4	4.1	4.1	4.6
South Korea	3.0	2.0	2.9	2.9	2.8	2.9
Taiwan	4.6	4.2	4.3	4.3	4.3	4.3
Thailand	4.0	3.6	3.2	3.6	3.3	3.5

Source: *IMF International Financial Statistics, 1990.*

Table 5. Educational Expenditure as a Percentage of total Government Expenditure in Selected Asian Countries, 1983-1990

Country	1986	1987	1988	1989	1990	Average
Malaysia	19.4	19.5	21.2	18.9	19.9	19.6
Indonesia	8.5	8.8	10.0	9.0	8.9	9.4
Philippines	18.0	15.7	17.1	16.6	16.4	16.8
Singapore	18.2	14.4	19.0	15.4	15.6	16.5
South Korea	18.1	18.3	19.0	17.4	17.7	18.1
Taiwan	20.5	20.3	19.7	20.2	20.2	20.2
Thailand	19.5	19.3	19.3	19.3	19.1	19.1

Source: IMF International Financial Statistics, 1990.

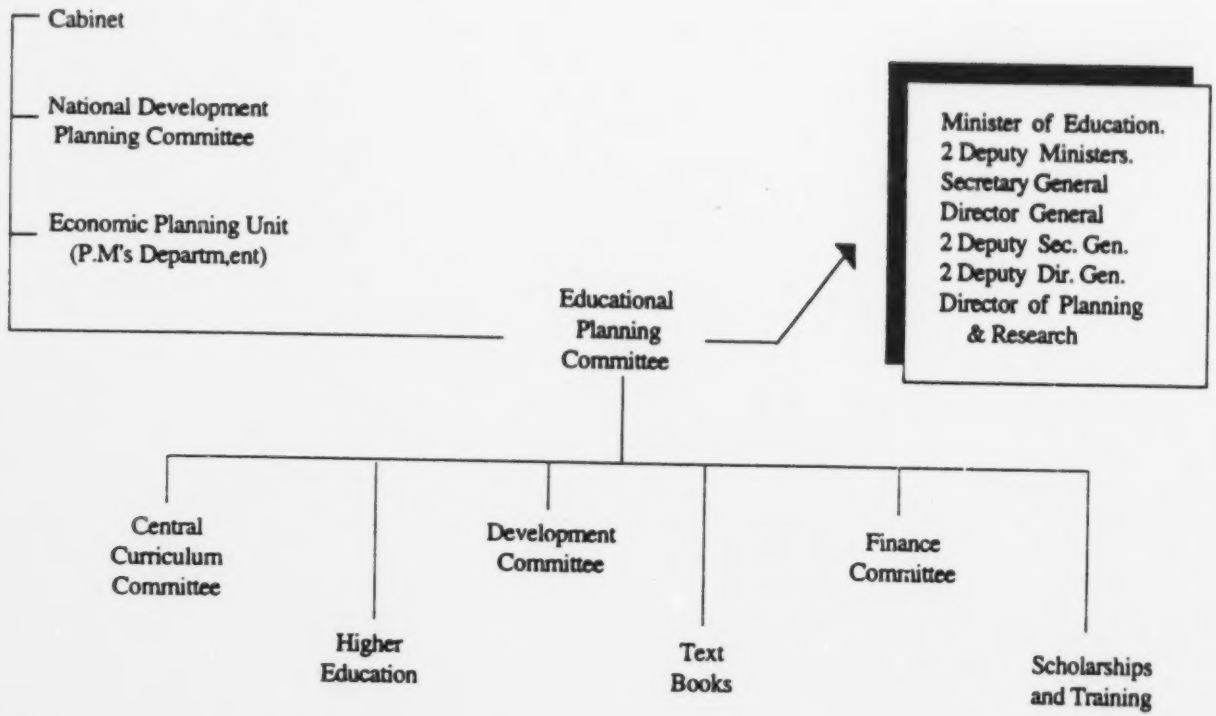

Figure 1. The Committee System

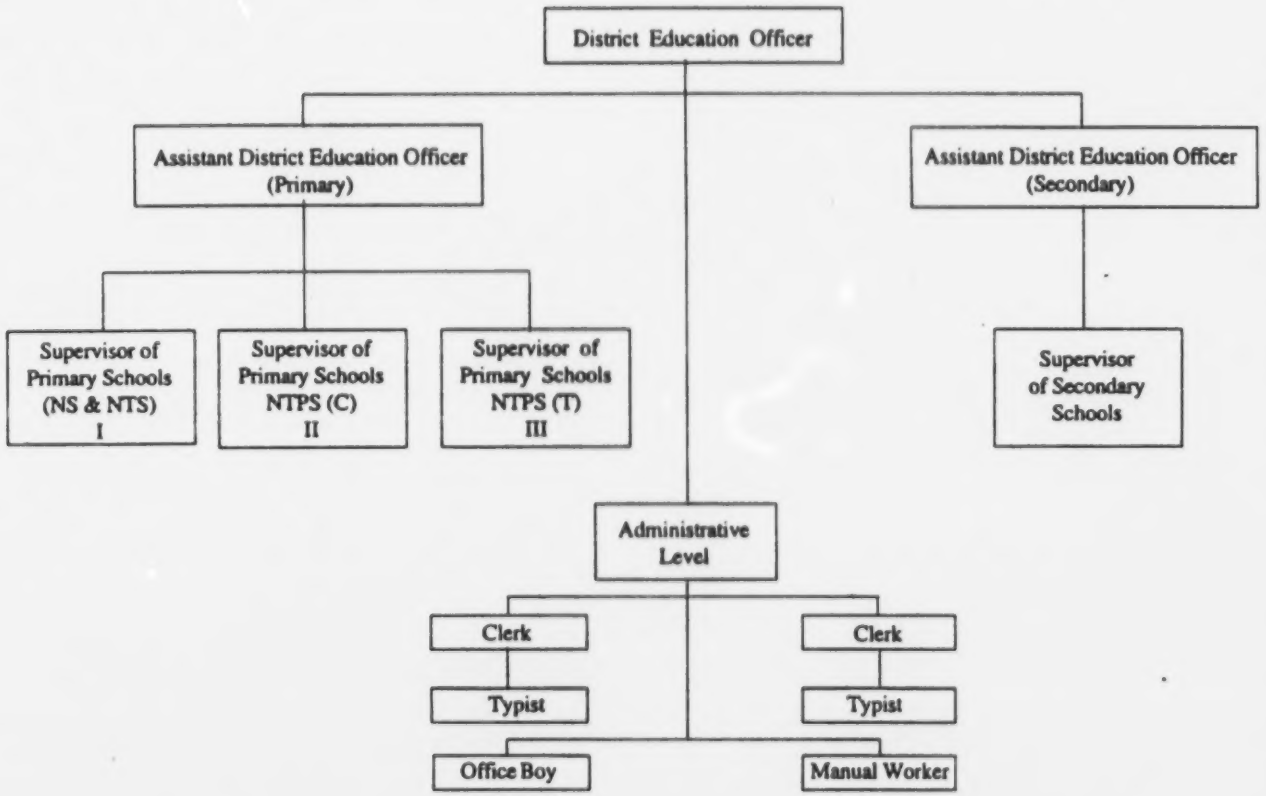

Figure 2. Organizational Chart of the District Education Office

Figure 2. Organizational Chart of the District Education Office

Figure 3. Organizational Chart of the State Education Office

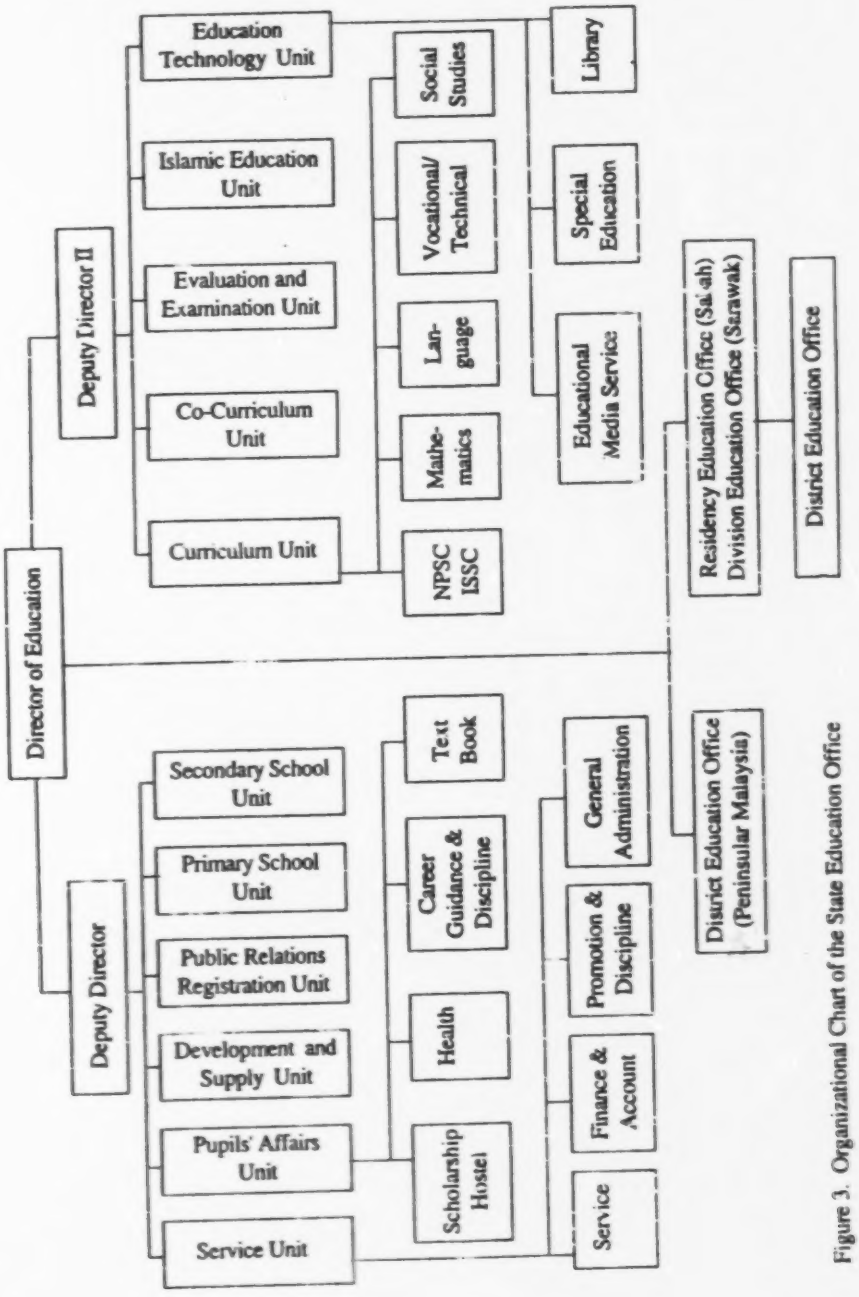

Figure 3. Organizational Chart of the State Education Office

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